Systematizing Quality Improvement and Quality Innovation for Persons with Diabetes: The Veterans Health Administration Experience

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Presenter: Len Pogach MD, MBA

National Program Director, Diabetes

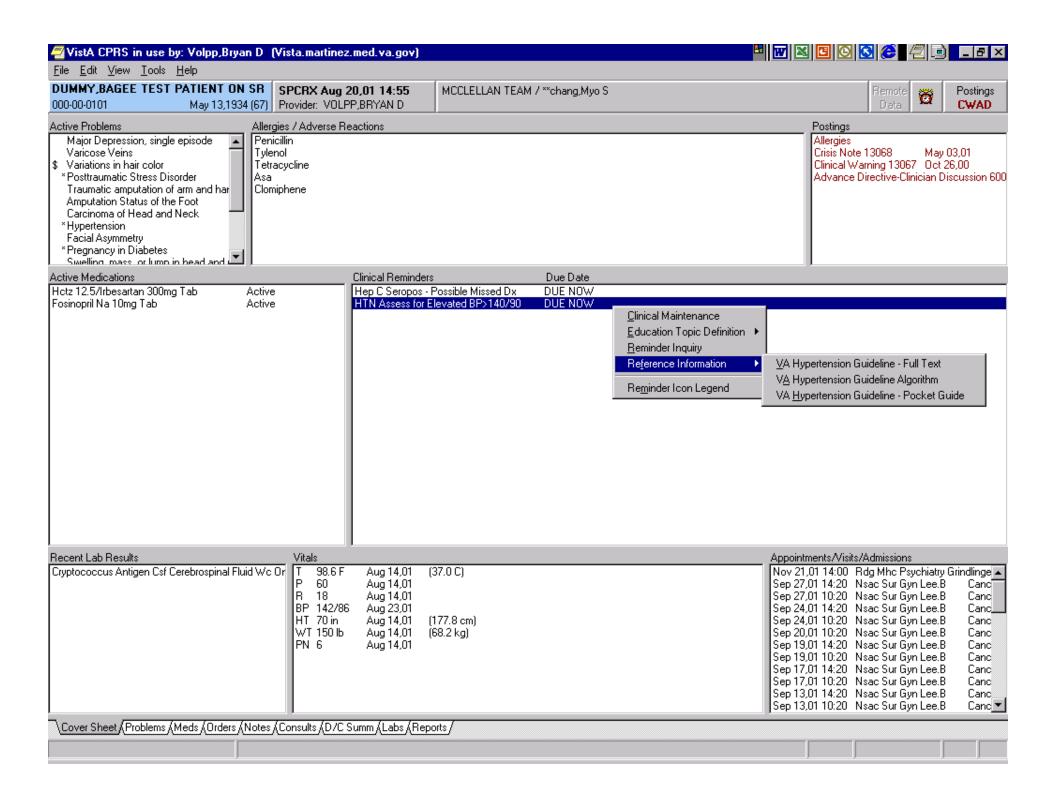
VACO Office Patient Care Services

Diabetes Prevalence in VHA

- Has increased from about 561,000 persons with diabetes among 2,923,000 clinical users in 1998 to an estimated 1,040,000 persons among 5,200,000 clinical users in 2004.
- Mostly men (97%); average age 65; economically challenged;
- Younger veterans more minorities and women
- Multiple comorbid conditions
- Approximate Prevalence Cardiovascular Disease 32%;
 CHF 30%; chronic kidney disease 30%; stroke 18% and serious Mental Health Disorders (25%);

VHA Policies and Initiatives

- Assignment of patients to an identified primary care provider;
- Development of evidence explicit clinical care guidelines for common conditions, including diabetes mellitus;
- Development of performance measures and contracts for directors in the system;
- Development of a national electronic medical record with local customization (clinical reminders)
- Initiation of translational research-Quality Enhancement Research Initiative
- Telemedicine (Home Based); tele-retinal imaging



| Reminder Resolution: HTN Assess for Elevated BP>140/90 |
|--|
| The most recent recorded BP was elevated. Satisfying this reminder requires addressing medication issues and/or education issues. (* Indicates a required field) The patient's last recorded BP is: |
| 146/92 (08/21/2001 14:18) |
| Repeat BP and record below if appropriate Blood Pressure: |
| INTERVENTIONS |
| ☐ Medications Adjusted ☐ Medication changes not warranted - BP usually controlled ☐ Medications changes not warranted based on comorbid illness/life expectancy/other ☐ Refuses Medication Adjustment RDUCATION |
| |
| Lifestyle Education for Hypertension done today (includes exercise and nutrition education) |
| Lifestyle Modifications Recommended - specific interventions |
| Adherence to Therapy Education |
| No Education Warranted (based on comorbidities/life expectancy/other) |
| Incorrect diagnosis of hypertension |
| Clear Clinical Maint Visit Info $<$ Back Next $>$ Finish Cancel |
| |
| <no encounter="" entered="" information=""></no> |
| * Indicates a Required Field |

VHA Diabetes Performance Measurement FY04

- HbA1c test (95%), 84 percent of HbA1c values less than 9 percent (+3%); ~65% <8%, ~41% <7% mean ~7.45
- Lipid profile within 2 years (96 percent; 74 percent of LDL-C values less 120 mg/dl (+3%) mean ~104 mg/dl
- Blood pressure control, 74 percent less than 140/90 (+3%)
- Dilated retinal examination, 80 percent (+5%)
- 79% had an influenza vaccination, 89% a pneumococcal vaccination within 5 years
- 22% used tobacco in the past 12 months, and 82% of these individuals were counseled three times for tobacco cessation.

| Setting and Clinical Topic | VA, 1997–1999 | Medicare, 1997–1999 | VA, 2000 | Medicare, 2000–2001 |
|---|---------------------|-------------------------|------------------------|---------------------|
| | percent (n | umber of patients who n | net criteria/total num | ber eligible) |
| Preventive care | | | | |
| Mammography | 89 (8200/9213) | 56 (1439/2569) | 90 (3260/3622) | 77 (15,652) |
| Influenza vaccination | 71 (85,568/120,519) | 66 (1696/2569) | 78 (32,808/42,061) | 71 (15,652) |
| Pneumococcal vaccination | 73 (82,617/113,174) | 46 (1182/2569) | 81 (36,030/44,481) | 64 (15,652) |
| Outpatient care | | | | |
| Diabetes | | | | |
| Annual measurement of glycosylated hemoglobin | 91 (19,188/21,194) | 71 (1824/2569) | 94 (24,222/25,768) | 70 (10,396/14,852) |
| Annual eye examination | 72 (15,287/21,194) | 69 (1773/2569) | 67 (16,290/24,314) | 74 (10,990/14,852) |
| Semiannual lipid screening | 68 (9290/13,618) | 57 (1464/2569) | 89 (22,934/25,768) | 60 (8911/14,852) |
| Inpatient care | | | | |
| Acute myocardial infarction | | | | |
| Aspirin within 24 hr after myocardial infarction | 92 (7856/8530) | 84 (4040/4809) | 93 (5505/5919) | 84 (5806/6912) |
| Aspirin at discharge | 95 (3895/4095) | 85 (4088/4809) | 98 (3631/3705) | 84 (5806/6912) |
| Beta-blocker at discharge | 91 (3724/4100) | 72 (3462/4809) | 95 (3520/3705) | 78 (5391/6912) |
| ACE inhibitor if ejection fraction <40% | NM | 69 (2418/3505) | 90 (877/974) | 71 (4908/6912) |
| Smoking cessation | NM | 39 (1876/4809) | 62 (2297/3705) | 38 (2627/6912) |
| Congestive heart failure | | | | |
| Ejection fraction checked | 92 (4380)† | 65 (2023/3112) | 94 (12,571/13,373) | 71 (8763/12,342) |
| ACE inhibitor if ejection fraction <40% | 94 (4380)† | 69 (4424/6412) | 93 (12,437/13,373) | 66 (1302/1972) |

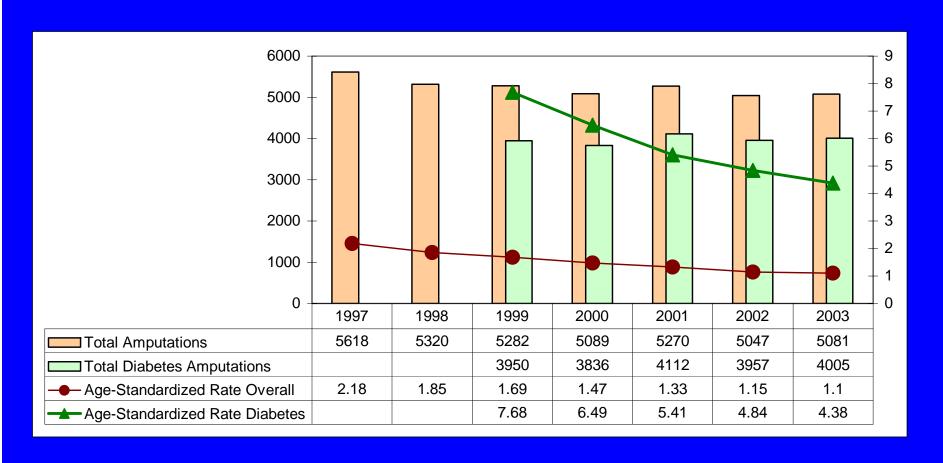
^{*} Medicare data are from the Center for Medicare Services billing system except data on influenza and pneumococcal vaccination, which are from the Behavioral Risk Factor Surveillance System, and data on acute myocardial infarction, which are from a chart review of 716 patients admitted with an International Classification of Diseases, 9th Revision, code of 410.xx. P<0.01 for all comparisons. ACE denotes angiotensin-converting enzyme, and NM not measured. † Data were available only for 1999.

VA-TRIAD Adjusted Intermediate Outcomes

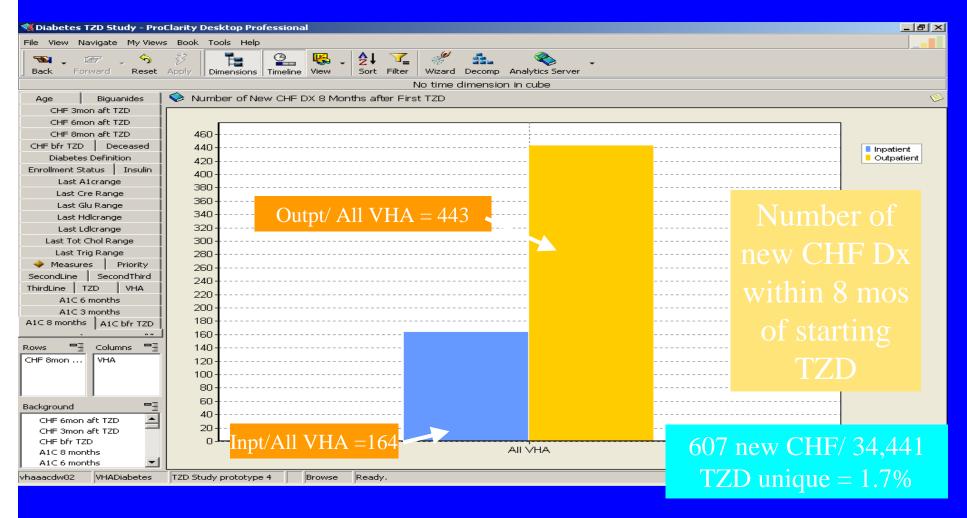
| | VA, % | CMC, |
|--|-----------|------------|
| A ₁ C level (proportion <8.5%)* | 83 | % 5 |
| A ₁ C level (proportion <9.5%)* | 92 | 80 |
| LDL level (proportion <100)* | 52 | 36 |
| LDL level (proportion <130) * | 86 | 72 |
| BP level (proportion <130/80) | 28 | 29 |
| BP level (proportion <140/90) | 53 | 52 |

*P<0.001

Overall (FY1997 – 2003) and Diabetes (FY1999 – 2003) Total Maximum Amputations with Age-Standardized Rates



Diabetes – TZD Safety



VACO Veterans Integrated Service Networks Support and Service Center

Summary

- VHA has instituted multifaceted, multidisciplinary approach to diabetes care, based in primary care, supported by EMR infrastructure, performance measurement and feedback
- VHA performance in intermediate measures is equal to or exceeds private sector (FFS Medicare, Commercial Plans)
- Adverse outcomes, such as amputation rates based upon VHA procedures, are decreasing
- Evaluation of long term morbidity and mortality outcomes has not yet been completed